5.1- JANUARY_ 2019 - LINDE_ SAMPLING_RESULTS MICROBAC*

January 15, 2019 East Chicago Sanitary District 5201 Indianapolis

East Chicago, IN 46312

Work Order No.: 19A0409

Re: Industrial #541 010819

Dear Nickie Geros:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 1/9/2019 11:47:00AM for the analyses presented in the following report as Work Order 19A0409.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely, Microbac Laboratories, Inc.

Dave Bryant

Project Manager



WORK ORDER SAMPLE SUMMARY

Date:

Tuesday, January 15, 2019

Client:

East Chicago Sanitary District

Project:

Industrial #541 010819

Lab Order: 19A0409

Lab Sample ID 19A0409-01

Client Sample ID

19A0409-02

#541 #541

Tag Number

Collection Date 01/08/2019 09:42 Date Received

1/9/2019 11:47:00AM

01/08/2019 09:42 1/9/2019 11:47:00AM



Analytical Results

Date:

Tuesday, January 15, 2019

Client:

East Chicago Sanitary District

Client Project:

Industrial #541 010819

Client Sample ID:

#541

Work Order/ID:

19A0409-01

Sample Description:

Sampled:

01/08/2019 9:42

Matrix: Aqueous				Samp Recei		01/08/2019 9:4:									
Analyses	Certs		Result	Limit MDL		RL	Qual	Units	DF	Analyzed					
7.415		Method: EPA 200.7 Rev 4.4								Analyst: BTM					
Total Recoverable Metals by ICP	7								Prep Date/	Time:01/10/2019 09:21					
Arsenic	diji	A			0.0053	0.010	J	mg/L	1	01/10/2019 15:16					
Chromium	dijl	A	ND	0.282	0.0011	0.0030 0.010	J	mg/L	1	01/10/2019 15:16					
Copper	diji		0.0074	0.17				mg/L	1	01/10/2019 15:16					
Lead	dijl	Α	ND	0.224	0.0033	0.0075		mg/L	1	01/10/2019 15:16					
Nickel	diji	Α	0.0014	0.39	0.0010	0.010	J	mg/L	1	01/10/2019 15:16					
Zinc	dijl	Α	0.058	5.5	0.0073	0.020		mg/L	1	01/10/2019 15:16					
Chloride			1	Method: SM	4500-CI B	-1997				alyst:EF Time:01/11/2019 16:12					
Chloride	di	Α	68	0,	1.0	1.0		mg/L	1	01/11/2019 16:12					
Chemical Oxygen Demand			1	Method: EPA	410.4 Rev	v 2.0				alyst: EF Tme: 01/15/2019 07:25					
Chemical Oxygen Demand	di A		57	250	9.3	10		mg/L	1	01/15/2019 10:45					
				/lethod: SM	4500-F C-1	1997 MOD		. •	Ana	llyst: EF					
Fluoride									Prep Date/Time: 01/15/2019 09:35						
Fluoride	dij	Α	0.68	2.9	0.010	0.10		mg/L	i 1	01/15/2019 9:35					
			l.	lethod: EPA	365.1 Rev	2.0			Ana	lyst: ABG					
Total Phosphorus as P									Prep Date/T	ime:01/12/2019 09:04					
Phosphorus, Total (As P)	dij	Α	0.229	5.5	0.0450	0.200		mg/L	1 1	01/14/2019 15:23					
			Λ	fethod: SW-	846 9038				Ana	lyst: ABG					
Sulfate, Turbidimetric									Prep Date/Ti	ime:01/15/2019 11:16					
Suffate	1	Α	38	0		10		mg/L	1	01/15/2019 12:01					
Total Dissolved Solids			Method: SM 2540 C-1997						Analyst: DAT Prep Date/Time: 01/11/2019 11:55						
Total Dissolved Solids (Residue, Filterable)	đij	Α	420	0	. 20	20		mg/L	1	01/14/2019 15:22					
Fotal Suspended Solids			N	lethod: SM 2	2540 D-199	7				yst: KM T					
Total Suspended Solids	dij	Α	40	400	4.0	4.5				p Date/Time:01/11/2019 11:39					
rotal Suspended Solids	uij	A	18	100	1.0	1.0		mg/L	- 15	01/11/2019 13:14					



Limit

Method: EPA 1664B

Analytical Results

Date:

Tuesday, January 15, 2019

Client:

East Chicago Sanitary District

Client Project:

Industrial #541 010819

Client Sample ID:

#541

Work Order/ID:

19A0409-02

Sample Description:

Sampled:

01/08/2019 9:42

Matrix:

Aqueous

Units

Analyses

Certs AT Result MDL RL Qual Received:

DF

01/09/2019 11:47

Oil & Grease (HEM) by SPE

Oil & Grease (HEM)

dij A 2.8 50 1.4 5.0

mg/L

Analyst: KMT Prep Date/Time:01/10/2019 07:50 01/10/2019 14:09

Analyzed

Microbac Laboratories, Inc.

MICROBAC

FLAGS. FOOTNOTES AND ABBREVIATIONS (as needed

B = Detected in the associated method Blank at a concentration above the routine RL

b- = Detected in the associated method Blank at a concentration greater than 2.2 times the MDL

b* = Detected in the associated method Blank at a concentration greater than half the RL CFU = Colony forming units

D = Dilution performed on sample

DF = Dilution Factor

g = Gram

E = Estimated Value

H = Analyte was prepared and/or analyzed outside of the analytical method holding time

I = Matrix Interference

J = Analyte concentration detected between RL and MDL (Metals / Organics)

LOD = Limit of Detection

LOQ = Limit of Quantitation

m3 = Meters cubed

MDL = Method Detection Limit

mg/Kg = Milligrams per Kilogram (ppm)

mg/L = Milligrams per Liter (ppm)

NA = Not Analyzed

ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

NR = Not Recovered

R = RPD outside accepted recovery limits

RL = Reporting Limit

S = Spike recovery outside recovery limits

Surr = Surrogate

U = Undetected

> = Greater than

< = Less than

% = Percent

* = Result exceeds project specific limits

ANALYTE TYPES: (AT)

A,B = Target Analyte

I = internal Standard

M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank

DUP = Method Duplicate

BS = Method Blank Spike

MS = Matrix Spike

ICB = Initial Calibration Blank

CCB = Continuing Calibration Blank

CRL = Client Required Reporting Limit

PDS = Post Digestion Spike

QCS = Quality Control Standard

ICSA = Interference Check Standard "A"

ICSAB = Interference Check Standard "AB"

BSD = Method Blank Spike Duplicate MSD = Matrix Spike Duplicate

ICV = Initial Calibration Verification

CCV = Continuing Calibration Verification

OPR = Ongoing Precision and Recovery Standard

SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

- d Illinois EPA drinking water, wastewater and solid waste analysis (#200064)
- Kansas Dept Health & Env. NELAP (#E-10397)
- j Kentucky Wastewater Laboratory Certification Program (#90147)
- North Carolina DENR NPDES effluent, surface water (#597)

Microbac Laboratories, Inc.

Cooler Receipt Log

Cooler ID: Default Cooler



Cooler Inspection Checklist

Ice Present or not required?	Yes
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes
Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes
Sample type identified on COC?	Yes
Correct type of Containers Received	Yes
Correct number of containers listed on COC?	Yes
Containers Intact?	Yes
COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes
Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes
Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes
Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes

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dy Record			Report Type		II reveil.	[] Level III CLP-fike	[] Level IV CLP-like	210-201 0466 240	@eastchicaco com		For Lab Use Only		0F0 + 1-1	1	705							Date/Time	2101 61-6-1		Date/Time	of Page 7 of 7
Chain of Custody Record	Number	Instructions on back		X Remine Only	pri recurs Only	III read III	[] Level IV	निकास स	chicago.com / iwoicik	berrand			+	+	+							i) werdin [Archive	RIN	(2)	Signature)	Page
90			Turnaround Time	[X] Routine (5 working days)	[] RUSH* (nonify lab)	(m) ()	(needed by)	Sampler Phone #	[X] c-mail (address) <u>ngeros@eastchicago.com / iwoicik@eastchicago.com</u>	H (WW), Other (specify) Thiosulfate, (9) Hexane. (1) [1]	POG GALIN	SS, TDS, FI, CI, S	'P'	4	×						[] Dispose as appropriet.	Received By (signature)	-	Received By (signature)	Received for Lab By (signature)	
5713 West 85th Street Indianapolis, IN 46278	Tel: 317-872-1375 Fax: 317-872-1379		toring	[X] Rou	11 RUS	7	•	2	×	Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) rate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane.	Requested E Analyses	Types ##	4 1112	-	7						Sample Disposition	Date/Time		Date/Time	Date/Time	
			Industrial Monitoring	#541		N LI Yes II No	31	TH H		rater (GW), Surface Methanol, (7) Sodiu	pə	lime Collect	19 942												11	
250 West 84th Drive Merriliville, IN 46410	-8378 9-1664					Monitorino	urzdi	Sampler Signature		Grounds	рэ	Oate Collect	14								active	y (si	Control of	osis) ka	Relinquished By (signature)	
) West 84 rrillville,	Tet: Z19-769-8378 Fax: 219-769-1664		Project	Location	#	Compliance M	(1)Agency/Program	Sam		ter (DW)		bərətli	-								[] Radioactive	Relinguished	7	nd menuco	quished	
[X] 250 Me	Tel Fas	$rac{1}{2}$	£	Š	PO#	S	ê	1	ł	king Wa IaOH, (5)		Grab Composite		×				\dashv	-		rdous	Relin	<u> </u>		E.	
			strict		27	dilla			(# xz	Tpe, Drir ICI, (4) N		*xiv)sl/	-	M/M	-			+	-	+	[] Non-Hazardous			77	10	
Samples Submitted to:	1	240	200	5201 Indianapolis Blvd.	e S Zip East Chicago, IN 46312	Nickie Geros / Henry Padilla	ant	(PRINT) ECSD Staff	E	* Matrix Types: Soil/Solid (S), Shidge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) Preservative Types: (1) HNO3, (2) HZSO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane. (1) Unpreserved	aqo, iN	Client Sample ID	#541 (composite)	#541 (Gab)							azard Identification [] Hazardous	cats			Sample temperature upon receipt in degrees C =	/15
_	#	541	/201	9									#541	#541							Possib	Comments			Sample	rev. 2/12/15